

## ABSTRACT

A discrete rotor position estimation method for a synchronized reluctance motor is provided. A d.c.-link voltage  $V_{dc}$  and a phase current  $I_{ph}$  are sensed. A flux-linkage  $\lambda_{ph}$  of an active phase is calculated from the sensed d.c.-link voltage  $V_{dc}$  and the sensed phase current  $I_{ph}$ . The calculated flux-linkage  $\lambda_{ph}$  is compared with a reference flux-linkage  $\lambda_r$ . The reference flux-linkage  $\lambda_r$  corresponds to a reference angle  $\theta_r$  which lies between angles corresponding to aligned rotor position and non-aligned rotor position in the synchronized reluctance motor. An estimated rotor position  $\theta_{cal}$  is obtained only once when the calculated flux-linkage  $\lambda_{ph}$  is greater than the reference flux-linkage  $\lambda_r$ .